APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,399	01/05/2001	Gary Hallmark	50277-1646	4042

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EXAMINER
COBY, FRANTZ

ART UNIT	PAPER NUMBER
2171	

DATE MAILED: 07/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____3_____ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *May 2, 2002* _____ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *20-52 and 56-88* _____ is/are pending in the application.

     4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *20-52 and 56-88* _____ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

     If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some*   c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     *See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

     a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____5_____   6) ☐ Other:

Reissue Applications

This is in response to an election made without traverse filed on May 02, 2002 in which claims

20-52 and 56-88 were elected and claims 53-55 and 89-91 were canceled.

Claim Status

20-52, 56-88 are pending.

Drawings

1.   New formal drawings are required in this application because the drawings previously

submitted are merely printed drawing copies of US Patent 5,857,180 . Applicant is advised to

employ the services of a competent patent draftsperson outside the Office, as the Patent and

Trademark Office no longer prepares new drawings. Further, transfer of drawings is no longer

done by the office.

Oath/Declaration

2.   The reissue oath/declaration filed with this application is defective because the error which

is relied upon to support the reissue application is not an error upon which a reissue can be based.

See 37 CFR 1.175(a)(1) and MPEP § 1414.

3.   The reissue oath/declaration filed with this application is defective because it fails to

identify at least one error which is relied upon to support the reissue application. See 37 CFR

1.175(a)(1) and MPEP § 1414. Specifically, the declaration does not point out whether

Applicant claimed more or less than he had the right to claim.

4.   Claims 20-52 and 56-88 are rejected as being based upon a defective reissue declaration

under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defect(s) in the declaration is set forth in the discussion above in this

Office action.

Offer to Surrender

5.   This reissue application was filed without the required offer to surrender the original

patent or, if the original is lost or inaccessible, an affidavit or declaration to that effect. The

original patent, or an affidavit or declaration as to loss or inaccessibility of the original patent,

must be received before this reissue application can be allowed. See 37 CFR 1.178.

Amendment

The amendment filed on April 10, 2001 does not include discussion of the status of the

claims as required by 37 CFR 1.173(c). Specifically, the amendment filed on the aforementioned

date does not include explanation of support for changes as required by MPEP 1453). Therefore,

the preliminary amendment is not in proper form. The status requires that all amendments be

made relative to the original patents. Therefore claims 27, 29 and 65 should be underlined in their

entirety.

Improper Recapture

Claims 23-37 are rejected under 35 U.S.C. 251 as being an improper recapture of claimed subject

matter deliberately canceled in the application for the patent upon which the present reissue is

based. As stated in Ball Corp. V. United States, 221 USPQ 289, 295 (Fed. Cir. 1984).

"The recapture rule bars the patentee from acquiring, through reissue, claims that are of the

same or broader scope than those claims that were canceled form the original application."

On September 24, 1997, claims 1-5 and 7-20 were rejected under 35 USC 102 (b) as

anticipated by Hong. In response to this rejection, the Applicant, on January 30, 1998, stated that

"claim 1 recites a parallellized execution plan including first and second operations, wherein the

second operation is the child of the first operation and that the first and second operations execute

in parallel". The applicant continues and stated also "this aspect of the invention has the

advantage that an increase of parallelism can occurred when parent and child processes execute in

parallel". The Applicant concluded that this "this configuration is not taught or suggested in

Hong or in any other references of record". As result, the Examiner on May 28, 1998, issued a

notice of allowance for the reason that "a system operating in parallel including the step of

generating a parallellized execution plan having first and second operations"were not taught by

the prior art of record. In contrast, new independent claims 20, 38, 42, 49, 56, 74, 78, and 85

differ from independent claims 1, 4,6, 8, 9, 12, 14 and 16-17 since those new independent claims

do not required a system operating in parallel including the step of *generating a parallellized*

execution plan having first and second operations . This is, therefore, an improper recapture.

Objection

This application is objected to under 37 CFR 1.172(a) as lacking the written consent of all

assignees owning an undivided interest in the patent. The consent of the assignee must be in

compliance with 37 CFR 1.172. See MPEP § 1410.01.

A proper assent of the assignee in compliance with 37 CFR 1.172 and 3.73 is required in

reply to this Office action. No consent has been filed.

Claim Rejections - 35 USC § 102

6.　　　The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7.　　　Claims 20-52 and 56-88 are rejected under 35 U.S.C. 102(b) as being anticipated by Hong

et al. "Optimization of Parallel Query Execution Plan in XPRS", Proceedings of the First

International Conference on Parallel and Distributed Information Systems, IEEE, 1991, pp. 218-

225.

Hong discloses a data processing system that optimize a database query (abstract). The database

processing system is comprised of a shared-memory multi-processor and a shared disk array (page

218 left column). The system optimizes a query by parallellizing fragments of a serial query

execution plan based on processors. This is done in two phases. The first phase assume a fixed

number of free processors and buffer space and generates an optimal plan done at compile-time

(page 218, a fixed amount of available sequential query execution right column). The second

phase generates an optimal parallel query execution plan at runtime based on the sequential query

execution plan, current number of free processors and current amount of available memory space

(page 224-225, section 5: "XPRS Query Processing"). Figure 1 of Hong disclosure shows that the

"hash build" being a child of the "hash probe" are executing in parallel. It is also figure 1 of Hong's

disclosure that the "hash build" can execute an operation on the "seqscan B" at the same time that

the "hash probe" is executing an operation on the "seqscan C". It is important to note that while

the "hash build", the child of the "hash probe", executing the same operation in parallel with the

"hash probe" on the "seqscan", there is no blocking between the operations, that is one operation

does not have to wait for another operation to finish processing. In addition, two forms of

parallelism is taught by Hong et al. One is intra-operation parallelism and inter-operation

parallelism. Intra-operation parallelism is achieved by partitioning data among multiple processors

and having those processors execute the same operation in parallel. The other, Inter-operation

parallelism is achieved by partitioning the query plan and executing different operations in parallel

(see page 219, right column).

As per claims 20-52 and 56-88, Hong disclosed the invention as claimed, including a method of parallelizing an operation including the steps of dividing the operation into a set of work partitions (page 224), assigning work partitions form said set of work partitions to a plurality of entities, wherein at least one entity of said plurality of entities is assigned a plurality of work partitions from said set of work partitions and said plurality of entities operating in parallel on work partitions assigned to them to perform operation (page 218, right column; figures 1 and 9; page 219 lines, right column, lines 20-33; page 225, left column, lines 1--8; page 224 left column, phase 1; right column, phase 2); (page 219, right column), (figure 1; page 219, right column, lines 20-33; figure 9; page 225, left column, lines 8-10) (page 225, left column, lines 13-40).

As per claims 21-37, the limitations of claim 20 are applicable. In addition, Hong taught receiving a query and assigning one entity a first work partition or a second work partition (page 225, left column, lines 1-8); (page 225, left column, lines 8-11). It should be noted that Hong must preserve the relative order in which the one or more segments can be executed so that correct data can be returned from a query.

As per claim 38, most of the limitations of this claim have been noted in the rejection of claim 20. Applicant's attention is directed to the rejection of claim 20 above. In addition, Hong discloses a degree of parallelism to use in performing the operation since the parallellizer in

Hong's method decomposes a sequential query execution plan into a set of fragments for execution. The degree of parallelism, is based upon the disk bandwidth and the number of free processor (page 225, left column, lines 29-32).

As per claims 39-41, the limitations of claim 38 are applicable. In addition, Hong taught statement specifying said degree of parallelism (page 219, right column, lines 1-11); (page 219, right column, lines 1-18) .

As per claims 42-52 and 56-73, most of the limitations of these claims have been noted in rejected claims above. In addition, the parallellizer in Hong's method decomposes a sequential query execution plan into a set of fragments for execution. The degree of parallelism, is based upon the disk bandwidth and the number of free processor (page 225, left column, lines 29-32). When there is only a single processor, that is a plurality of resources are not available, the system executes the fragment serially. Therefore, Hong teaches executing the serial plan when the plurality of resources are not available.

As per claims 74-88, the limitations of these claims have been noted in the rejected claims. They are therefore rejected as set forth above.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Choy et al. (U.S. Patent no. 5,551,027) disclosed a multi-tiered indexing method for partitioned

data.

Dwyer (U.S. Patent no. 4,769,772) disclosed an automated query optimization method using both

global and parallel local optimization for materialization access planning for distributed databases.

Shan et al. (U.S. Patent no. 5,325,525) disclosed a method of automatically controlling the

allocation of resources of a parallel processor computer system by calculating a minimum

execution time of a task and scheduling sub-tasks against resources to execute the task in the

minimum time.

Tsuchida et al. (U.S. Patent no. 5,091,852) disclosed a system for optimizing query processing in

a relational database.

Green (U.S. Patent no. 4,829,427) disclosed a database query code generation and optimization

based on the cost of alternate access methods.

Bergsten et al. "Proto-typing DBS3, a Shared-Memory Parallel Database System", Proceedings of

the First International Conference on Parallel and Distributed Information Systems, IEEE, 1991,

pp. 226-234.

Hirano et al. "Load balancing Algorithm for Parallel Database Processing on Shared Memory

Multi-processor" Proceedings of the First International Conference on Parallel and Distributed

Information Systems, IEEE, 1991, pp. 210-217.

Any response to this action should be mailed to:

               Commissioner of Patents and trademarks

               Washington, D.C. 20231

or faxed to:

(703) 305-9051, (for formal communications

intended for entry)

Or:

(703) 308-5357 (for informal of draft

communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington.

VA., Sixth Floor (Receptionist).

8.   Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Frantz Coby whose telephone number is (703) 305-4006. The examiner can

normally be reached Monday through Friday from 9:30 A.M. to 6:00 P.M.

9.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Safet Metjahic, can be reached on (703)308-1436. The Fax phone number for this

Group is After Final (703) 746-7328; Official (703) 746-7239; Non-Official/Draft (703) 746-

7240.

FRANTZ COBY
PRIMARY EXAMINER

June 19, 2002